

CLAIMS

What is claimed is:

Sub C3

1. An isolated polynucleotide selected from the group consisting of:
 - (a) a polynucleotide having a sequence comprising the nucleotide sequence SEQ ID NO: 1, and functional fragments thereof;
 - (c) a polynucleotide encoding a polypeptide having a sequence that is at least 75% homologous to SEQ ID NO: 2, and functional fragments thereof; and
 - (d) a polynucleotide capable of hybridizing under stringent conditions to a polynucleotide having a sequence comprising the nucleotide sequence SEQ ID NO: 1, and functional fragments thereof.
2. The polynucleotide of claim 1, linked to a second nucleotide sequence encoding a fusion polypeptide.
3. The nucleotide of claim 2 wherein the fusion polypeptide is a heterologous signal peptide.
Sub C1
4. The nucleotide of claim 2 wherein the polynucleotide encodes a functional fragment of the polypeptide having the SEQ ID NO: 2.
5. An isolated polypeptide having a sequence that is at least 75% homologous to SEQ ID NO: 2, and functional fragments thereof.
Sub D6
The polypeptide of claim 5, wherein said polypeptide has the sequence of SEQ ID NO: 2 or functional fragments thereof.
7. A polypeptide comprising the polypeptide of claim 5 linked to a fusion polypeptide.

8. The polypeptide of claim 7, wherein the fusion polypeptide is a signal peptide.

Sub P 9. The polypeptide of claim 7, wherein the fusion polypeptide comprises a heterologous polypeptide having adjuvant activity.

10. An expression cassette, comprising the polynucleotide of claim 1 operably linked to a promoter.

Sub C 11. An expression vector, comprising the expression cassette of claim 10.

12. A host cell, comprising the expression cassette of claim 10.

Sub C 13. The host cell of claim 10, wherein said host cell is a prokaryotic cell.

Sub C 14. The host cell of claim 13, wherein said host cell is a eukaryotic cell.

15. A method for producing a recombinant polypeptide having SEQ ID NO: 2, comprising:

- (a) culturing a host cell of claim 12, under conditions that allow the expression of the polypeptide; and
- (b) recovering the recombinant polypeptide.

Sub C 16. A vaccine vector, comprising the expression cassette of claim 10.

17. The vaccine vector of claim 16, wherein said host mammal is human.

Sub C 18. The vaccine vector of claim 16, in a pharmaceutically acceptable excipient.

Sub C 19. A pharmaceutical composition, comprising a immunologically effective amount of the vaccine vector of claim 14.

20. A method for inducing an immune response in a mammal, comprising:
administering to said mammal an immunologically effective amount of the vaccine
vector of claim 16, wherein said administration induces an immune response.

21. A pharmaceutical composition, comprising an immunologically effective amount of the
polypeptide of claim 5 and pharmaceutically acceptable diluent.

Sub P
22. The pharmaceutical composition of claim 21, further comprising an adjuvant.

23. The pharmaceutical composition of claim 21, further comprising one or more known
Chlamydia antigens.

24. A method for inducing an immune response in a mammal, comprising:
administering to said mammal an immunologically effective amount of the
pharmaceutical composition of claim 21, wherein said administration induces an
immune response.

25. A polynucleotide probe reagent capable of detecting the presence of *Chlamydia* in biological
material, comprising a polynucleotide that hybridizes to the polynucleotide of claim 1 under
stringent conditions.

Sub A
26. The polynucleotide probe reagent of claim 25, wherein said reagent is a DNA primer.

27. A hybridization method for detecting the presence of *Chlamydia* in a sample, comprising the
steps of:
(a) obtaining polynucleotide from the sample;
(b) hybridizing said obtained polynucleotide with a polynucleotide probe reagent of
claim 21 under conditions which allow for the hybridization of said probe and said
sample; and
(c) detecting said hybridization of said detecting reagent with a polynucleotide in said
sample.

Sub D

28. An amplification method for detecting the presence of *Chlamydia* in a sample, comprising the steps of:

- obtaining polynucleotide from the sample;
- amplifying said obtained polynucleotide using one or more polynucleotide probe reagents of claim 25; and
- detecting said amplified polypeptide.

29. A method for detecting the presence of *Chlamydia* in a sample comprising the steps of:

- contacting said sample with a detecting reagent that binds to the polypeptide having SEQ ID NO: 2 to form a complex; and
- detecting said formed complex.

30. The method of claim 29, wherein said detecting reagent is an antibody.

31. The method of claim 30, wherein said antibody is a monoclonal antibody.

32. The method of claim 30, wherein said antibody is a polyclonal antibody.

33. An affinity chromatography method for substantially purifying a polypeptide having SEQ ID NO: 2, comprising the steps of:

- contacting a sample containing said polypeptide with a detecting reagent that binds to said polypeptide to form a complex;
- isolating said formed complex;
- dissociating said formed complex; and
- isolating the dissociated polypeptide.

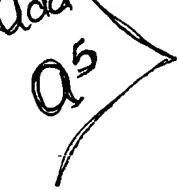
34. The method of claim 33, wherein said detecting reagent is an antibody.

35. The method of claim 34, wherein said antibody is a monoclonal antibody.

36. The method of claim 34, wherein said antibody is a polyclonal antibody.

37. An antibody that immunospecifically binds a polypeptide of claim 5, or a fragment or derivative of said antibody containing the binding domain thereof.

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A⁵* 
*add
C¹⁴* 